

**The State of Women Veterans' Health Research: Results of a Systematic Literature Review
Evidence Tables**

Table 3d. Evidence Table of Health Services Research: <i>Utilization and Health Care Organization</i>						
Author	Women Veteran Specific?	Sample characteristics	Sample size [N]	Design	Main measures	Description
Ashton, 1998 (115)	No	National sample from VA hospital discharge database, outpatient clinic files and veteran population files, 1994	2.7 million veteran users - 283,500 women veterans	Descriptive Study	1994 hospital and clinic utilization statistics	Evaluated characteristics of VA users including age and gender as well as statistics related to outpatient use, hospital admissions and types of DRGs. Women were less likely to use VA hospital care than men
Guihan, 1999 (116)	Yes	National sample of all VA nursing home residents from VA administrative files, 1990-1995	1990: 18,824 men and 562 women; 1995: 28244 men and 965 women	Descriptive Study	Long-term care utilization and characteristics of male and female LTC users	Compared LTC utilization by male and female veterans. Women in long-term care were less likely to be married, were older and poorer and had longer lengths of stay.

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Hoff, 1998 (117)	Yes	National sample of Vietnam veterans - NVVRS	736 female and 1612 male Vietnam veterans	Observ. Study- Assess risk or prognosis	Demographic variables; psychiatric disorders; availability of mental health services; utilization of mental health services, both VA and non-VA	Compared the use of VA and non-VA mental health services for men and women Vietnam veterans. Female and male veterans had equal use of VA mental health services but female veterans had greater use of non-VA mental health services indicating possible underutilization of VA services for women.
Hoff, 1988 (118)	Yes	National cohort of veterans utilizing VA specialty mental health services during a two-week period in 1991	70,979 veterans	Observ. Study- Assess risk or prognosis	Psychiatric diagnoses and status; use of inpatient and outpatient mental health services;	Compared the use of mental health services by male and female veterans. The study found no difference in the use of general psychiatric services or the intensity of services used. Women were less likely to receive substance abuse care.
Pierce, 1999 (87)	Yes	Sample of Gulf War women veterans stratified for component, deployment location and parental status	525 active duty, reserve, guard or veteran women	Observ. Study- Assess risk or prognosis	Demographic variables; gender-specific problems; health care utilization rates; satisfaction with military and civilian life	Evaluated the prevalence of various health problems and health care utilization rates for a sample of Gulf War military women. 79% of women had at least one gender-specific condition for which they sought care. 76% used military health care for treatment of at least one gender-specific condition during their military career and 41% used civilian health care. Active duty military were more likely to use military health care. Symptoms were more common in enlisted women as compared to officers. Satisfaction ratings were higher for civilian care.

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Romeis, 1988 (119)	Yes	National random probability sample of women veterans	3003 female veterans	All Other Observational	Demographic variables; health status; use of VA benefits; distance to nearest VA facility; outpatient and inpatient use	Analyzed the 1985 Survey of Female Veterans to understand utilization of overall and VA health care services. Predictors of VA care use differ from predictors of overall care. VA outpatient use is associated with low income, nonwhite, poor health status, SC-disability, proximity, past use, lack of private insurance. Non-VA outpatient use is associated with poorer health status, more medical conditions and private insurance. The biggest predictor of outpatient and hospital use is pregnancy.
Romeis, 1991 (120)	Yes	National sample of female veterans from the National Center for Health Statistics 1982 and 1984 Health Interview Surveys	2181 female veterans compared to 77,900 non-veterans	Descriptive Study	Demographic variables; physician/hospital contact and hospital nights	Evaluated the predictors of outpatient visits and hospital stays for veteran and non-veteran females. With the exception of veterans having slightly higher physician contact rates, being a veteran did not predict utilization. Similar factors predicted use for veterans and non-veterans.

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Sajatovic, 1997 (121)	Yes	All women hospitalized on the psychiatry service at the Brecksville VAMC, 10/93 – 10/95; age and diagnosis matched-male veterans	57 women; 114 men	Observ. Study- Assess risk or prognosis	Demographic variables; psychiatric diagnoses; length of stay; medication prescription	Compared the clinical characteristics and health care utilization of men and women veterans hospitalized with schizophrenia, schizoaffective or BAD. Men and women had similar lengths of stay and similar numbers of psychiatric hospitalizations during the study period. The only significant gender difference was in prescription of medications with women being more likely to receive atypical anti-psychotics.
Schuler, 1986 (122)	Yes	Survey of Chiefs of Psychology at VA medical centers	91 Chiefs of Psychology	Observ. Study- Assess risk or prognosis	Types of female-oriented psychological services that are offered; VAMC classifying characteristics	The number of female-oriented services offered routinely was related to the state population of female veterans, the income of veterans, the total number of psychologists on staff and the annual number of clients.
Weiss, 1994 (123)	Yes	VA discharge database and population database, 1987	20,753 discharges for women	Descriptive Study	Discharge rates, hospital user rate, average number of stays	Over the course of the 1980s, discharge rates increased substantially for women, increasing by 9.7%. Over the same time period, discharges for men decreased by 6.3%. These data demonstrate increased utilization of VA hospitals by women veterans.

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Bean-Mayberry, 2004 (124)	Yes	Sample of women from 10 VAMCs who used outpatient care between 3/99 and 3/00 and who had both a VA primary care provider and had used a non-VA physician in the preceding year	1051 women veterans	Observ. Study- Assess risk or prognosis	Characteristics of women's experiences with VA health care including provider and clinic characteristics; patient satisfaction with care; demographic data	Evaluated indicators of dual use of VA and non-VA providers by women. Lower likelihood of dual use was associated with provision of routine gynecological care by VA providers and use of VA women's clinics. Increased likelihood of dual use was associated with dissatisfaction with care and higher income. Having a female provider was not associated with dual use.
Murdoch, 2003 (125)	No	Random sample of all veterans filing PTSD disability claims between 1/1/94 and 12/31/98	2700 men and 2700 women veterans	Observ. Study- Assess risk or prognosis	Race/ethnicity; service connection for PTSD; PTSD symptomatology; work/role/social functioning; physical functioning; combat exposure; military sexual trauma; other trauma	Evaluated whether there are racial discrepancies in the granting of service connection for PTSD. 55% of black respondents were female compared with 49% of all other respondents. Blacks were significantly less likely to be service connected for PTSD (46% vs 65.2% for all others) but about as likely to be service connected for other disorders. Controlling for gender, blacks had similar combat exposure scores but were less likely to have had a combat injury or in-service sexual assault. They did not differ in terms of PTSD symptomatology. There appears to be a disparity in service-connection for PTSD for blacks.

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Author	Women Veteran Specific?	Sample characteristics	Sample size [N]	Design	Main measures	Description
Westermeyer, 2002 (126)	No	Upper midwest Indians	543 Native Americans; 13% female	All Other Observational	Perceived barriers to using VA mental health care; demographic variables; Brief Symptom Checklist; alcohol-drug screening; PTSD checklist; current/lifetime psychiatric diagnoses; use of mental health resources	Evaluated perceived barriers to use of VA mental health services by Midwest American Indian veterans. 121 of the subjects reported at least one barrier to seeking VA mental health care with a mean of 3.9 barriers/subject. Perceived barriers were not related to age, gender, symptom rating scales or psychiatric diagnoses. Veterans who had used traditional-alternative-complementary healing in the last year reported significantly more barriers to VA mental health care.
Cradock-O'Leary, 2002 (127)	No	Sample of patients who received outpatient treatment and medical centers or clinics in VISN 22, FY 2000	9,019 women; 166,634 men	Observ. Study- Assess risk or prognosis	Demographic variables; global assessment of functioning scale; service-connection; psychiatric diagnoses; co-morbid medical diagnoses; visits to primary or specialty care clinics	Evaluated medical service use by veterans in VISN 22. Those with mental health diagnoses, particularly severe mental illness, had fewer medical visits than those without mental health diagnoses. Female had fewer visits and older patients had more visits. Those with comorbid diagnoses of chronic obstructive pulmonary disease, hypertension or diabetes also had more visits.

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Murdoch, 2003 (128)	Yes	All veterans who filed PTSD disability claims between 1980 and 1988	174,991 men and 5043 women	All Other Observational	Demographic and service characteristics; PTSD claim results; service-connection information	Evaluated trends in PTSD disability application and approval rates. Claim approval rates for PTSD were twice as high for combat-injured men and women than for uninjured men and women. Rates of PTSD service connection for uninjured men ranged from 18-63% and for uninjured women from 0-57%. Post-Vietnam era women were more likely to be service-connected for PTSD than Vietnam era women. There were also regional differences in PTSD claim approval rates.
Murdoch, 2003 (129)	Yes	Random selection of men and women veterans applying for PTSD disability benefits between 1/94 and 1/98	2700 men & 2700 women surveyed with responses from 1654 and 1683	All Other Observational	Service connection for PTSD, current PTSD severity, combat exposure, in-service sexual trauma, level of functional impairment, demographics and other factors	Women's odds of being service connected for PTSD were lower than men's until combat exposure is accounted for; indicating that women may be less likely to receive service connection for PTSD since they are less likely to have combat exposure.
Huynh-Hohnbaum, 2003 (130)	Yes	Sample of women recruited in Los Angeles	24 women veterans	Qualitative Research	Demographic variables; veteran identity; ethnic/racial identity; gender identity; use of VA health services	Used focus groups consisting of WWII/Korean women veterans and Vietnam/Gulf War women veterans to evaluate their veteran identity and how this influences use of VA health care services. A significant proportion of veterans had experienced some form of gender discrimination in the military, through segregation or sexual harassment and their perceptions of the VA health care system were framed by their military, ethnic/racial and gender experiences.

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Bosworth, 2000 (131)	Yes	Convenience sample of women veterans with appointments at the Durham VAMC Women's Health Center, 9/15/97 – 11/6/97; VA outpatient file	139 women veterans	All Other Observational	Demographic variables; self-reported health (PRIME-MD); depressive symptoms; somatic symptoms; VA outpatient health service use	Evaluated whether self-rated health was associated with health service use among women veterans. Women with self-rated poor or fair health were significantly more likely to have >12 outpatient visits than women reporting excellent or very good health.
Yano, 2003 (132)	Yes	All VA Medical Centers and Community-Based Outpatient Clinics with >400 women, 2001	136 VAMCs and CBOCs	Descriptive Study	Organization of women's health care delivery in the VA	Describes how care is organized for women veterans and what types of services are provided. At 56% of VAs, the majority of women uses general primary care but are typically referred to specialized women's clinics for gender-specific care. 56% of VAs have separate women's health clinics for the delivery of primary care and gender-specific care. 58% have gynecology clinics. Mental health is generally integrated but 43% of VAs have one or more designated women's mental health providers.
Hoff, 1998 (133)	Yes	National sample of veterans as part of the National Survey of Veterans, 1992	305 women; 7004 men	All Other Observational	Sociodemographic variables; military service variables; physical health and disability; health services utilization	Compared utilization of VA care by female and male veterans in 1992. Overall, women veterans were less likely to use VA health services primarily because of lower utilization of outpatient services, specifically for women with mental health disorders. Use of inpatient services was similar for men and women. Women with physical conditions did not differ from men with similar conditions in their outpatient utilization. There were no differences in reasons for choosing VA or non-VA facilities for care.

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Ouimette, 2003 (134)	Yes	Stratified random sample of women veterans from the National Registry of Women Veterans	1500 female veterans	All Other Observational	Sociodemographic variables; military trauma exposure; health variables including health status; depressive symptoms; type of use of VA – current, former or nonusers	Evaluated predictors of whether women veterans are current, former or non-users of the VA health care system. VA use was associated with older age, more education, not being married, lower private insurance and poorer physical and mental health. Former users were more likely to be ethnic minorities, have children, have served less time in the military and have higher rates of insurance and better physical and psychological health than current users. Military experiences such as serving in a war-zone or being exposed to trauma were associated with former use and never using the VA.
Forneris, 2002 (135)	Yes	Convenience sample of women veterans with appointments at the Durham VAMC Women's Health Center, 9/15/97 – 11/6/97	139 women veterans	Observ. Study- Assess risk or prognosis	Mental disorders and somatoform symptoms; outpatient health service use;	Evaluated differences in VA outpatient care use among female veterans who use or do not use mental health services. Women who used outpatient mental health services were significantly more likely to have greater non-mental health service use as well, compared to those without mental health service use.

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Greenberg, 2004 (136)	Yes	Sample of women veterans receiving treatment in one of four specialized PTSD treatment programs, 7/98 – 6/00; national outpatient treatment files	224 women veterans; 149 women veterans at 1 st follow-up; 131 at 2 nd follow-up	All Other Observational	Sociodemographic characteristics; treatment process measures; clinical measures including PTSD symptoms, substance abuse, general psychiatric/physical health, violent behavior and employment; continuity of care and intensity of care	Evaluated the relationship of changes in health status to continuity of care in women entering a PTSD treatment program. There were few consistently significant associations between continuity of care and outcome measures in the full regression models thereby providing weak and inconsistent evidence of the benefits of continuity of care.
Suris, 2004 (55)	Yes	Sample of women veterans enrolled in a clinic within the VA North Texas Health Care System with at least one outpatient appointment in the previous 5 years, 1997-2000	270 women veterans	Observ. Study- Assess risk or prognosis	Sexual assault experiences; PTSD symptomatology; utilization of inpatient and outpatient VA care; costs of care	Evaluated the differential impact of military, civilian adult and childhood sexual assault on the likelihood of developing PTSD; and, evaluated the relationship of military sexual assault to use of VA services and health care costs. Compared to women without a history of assault, women with military sexual assault, childhood sexual assault and civilian sexual assault were 9, 7 and 5 times more likely, respectively, to have PTSD. PTSD is more likely to be diagnosed in women with military sexual assault than childhood sexual assault, and only childhood sexual assault was associated with a significant increase in health care utilization and cost for services.

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Washington, 2003 (137)	Yes	All VA Medical Centers and Community-Based Outpatient Clinics with >400 women, 2001	136 VAMCs and CBOCs	Observ. Study- Assess risk or prognosis	Service availability for comprehensive women's health care in VA	Describes types of services available for women and finds that virtually all sites have availability of comprehensive women's health care, either on-site or off-site. On-site care is primarily restricted to basic services.